List of Current Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1- 10 (Cancelled).

11.   (New)   A method for measuring a fill level of a fill substance in a container using a fill level measuring device operating according to a travel-time principle, comprising the steps of:

sending periodic transmission signals toward the fill substance;

registering and converting their echo signals into an echo function; and

determining at least one echo characteristic of the echo function, and, on the basis of echo characteristics of at least one preceding measurement, a prediction is derived for echo characteristics to be expected in the case of a current measurement, wherein:

echo characteristics of the current measurement are determined, taking into consideration the prediction, and, on the basis of the echo characteristics, the current fill level is determined.

12.   (New)   The method as claimed in claim 11, wherein:

the echo characteristics include travel-times of maxima of the echo function and a known reflector in the interior of the container, especially a fill substance surface, a floor of the container or a fixedly installed disturbance, can be associated with the maxima.

13.   (New)   The method as claimed in claim 12, wherein:

on the basis of travel-time of at least one maximum of a previous measurement, a prediction is made for travel-time of a corresponding maximum to be expected in the case of the current measurement.

14. (New) The method as claimed in claim 13, wherein:

a prediction is made that travel-times to be expected for maxima equal travel-times of corresponding maxima of a preceding measurement.

15. (New) The method as claimed in claim 13, wherein:

the prediction is made for travel-times of the maxima by calculating an instantaneous rate of change of the travel-times on the basis of at least two preceding measurements and the travel-time to be expected is extrapolated on the basis of this rate of change.

16. (New) The method as claimed in claim 13, wherein:

the prediction is made for travel-times of the maxima by calculating an instantaneous acceleration and an instantaneous rate of change of the travel-times on the basis of at least three preceding measurements, and the travel-time to be expected is extrapolated on the basis of the acceleration and the rate of change.

17. (New) The method as claimed in claim 11 wherein:

an echo characteristic is a travel-time of a wanted echo reflected on the fill substance surface;

a predicted travel-time to be expected for the wanted echo reflected on the fill substance surface in the case of a current measurement is ascertained on the basis of at least one preceding measurement;

that maximum of an echo function for the current measurement is selected whose travel-time has a smallest deviation from the predicted travel-time of the wanted echo reflected on the fill substance surface; and,

taking into consideration the travel-time of this maximum, the current fill level is ascertained.

18. (New) The method as claimed in claim 11, wherein:

an echo characteristic is a travel-time of an echo reflected on the floor of the container;

a predicted travel-time to be expected for the echo reflected on the floor of the container in the case of a current measurement is ascertained on the basis of at least one preceding measurement;

that maximum of an echo function for the current measurement is selected whose travel-time has a smallest deviation from the predicted travel-time of the echo reflected on floor of the container; and,

taking into consideration the travel-time of this maximum, the current fill level is ascertained.

19.   (New) The method as claimed in claim 18, wherein:

from the travel-time of the current echo reflected on the floor, an estimated value for the travel-time of the current wanted echo is calculated; that maximum of the current echo function is selected, whose travel-time shows the smallest deviation from the estimated value; and, on the basis of the travel-time of this maximum, the current fill level is determined.

20.   (New)   The method for measuring a fill level of a fill substance in a container as claimed in claim 11, wherein:

the measured results are continuously reviewed for their plausibility.